



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

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Thomas Pinkos
Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive
Rancho Cordova, CA 95670-6114

Dear Mr. Pinkos:

Thank you for submitting the total maximum daily loads (TMDLs) to address diazinon and chlorpyrifos impairment of 6 Sacramento urban creeks: Arcade Creek, Elder Creek, Elk Grove Creek, Morrison Creek, Chicken Ranch Slough, and Strong Ranch Slough. The submission to EPA is dated October 14, 2004. Based on our review, we have concluded that the TMDLs adequately address the pollutants of concern and that, upon implementation through the Sacramento County stormwater permit, will attain applicable water quality standards. The TMDLs include allocations as needed, take into consideration seasonal variations and critical conditions, and provide an adequate margin of safety. The Regional Board has provided adequate opportunities for the public to review and comment on the TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved.

After we received the TMDL submission, counsel for Makhteshim Agan of North America and Dow AgroSciences LLC requested that EPA disapprove the TMDLs based on alleged concerns about the diazinon criteria calculations upon which the State relied, in part, to develop the TMDLs. The requestor made similar comments to the State during the comment period, and the State's comment responsiveness summary demonstrates that these comments were adequately considered in the final TMDL decisions. The Regional Board previously committed to review and, if necessary, revise the diazinon water quality objectives in 2007. EPA supports the State's commitment to review the diazinon water quality objectives in 2007, and we believe that is the appropriate time to address the requestor's concerns. The State should consider all readily available information about diazinon effects, including the information provided by the requestor, in the review of the diazinon objective.

The Sacramento urban creeks TMDL submission did not include a water quality standards change that required EPA review or action, and is instead based on the State's interpretation of its narrative water quality standards applicable to the Sacramento urban creeks. The State has substantial discretion to interpret its narrative water quality standards, and neither the TMDL submission nor the material provided by the requestor provided a basis for EPA to disapprove the TMDLs based on the State's interpretation of its standards.

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The attached review discusses the basis for this approval decision in greater detail. We appreciate the Regional Board's work to complete and adopt the TMDLs and look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3572 or Debra Denton at (916) 341-5520.

Sincerely,

Alexis Strauss

Alexis Strauss
Director
Water Division

30 Nov. 2004

Enclosure

cc: Celeste Cantú, SWRCB
Ken Harris, SWRCB

**Staff Report Supporting Approval of TMDLs:
TMDL for Diazinon and Chlorpyrifos in the Sacramento Urban Creeks**

Background

The State of California listed six Sacramento urban creeks as water quality limited due to diazinon and chlorpyrifos in the State's Clean Water Act Section 303(d) list beginning in 2002. Consistent with the requirements of Clean Water Act Section 303(d)(1), Central Valley Regional Water Quality Control Board staff developed these diazinon and chlorpyrifos TMDLs to meet the narrative pesticide and toxicity water quality objectives for the Sacramento urban creeks.

The Resolution containing the TMDLs was adopted by the Central Valley Regional Water Quality Control Board on September 10, 2004 under Resolution No. R5-2004-0109. TMDLs were adopted for the following waters: Arcade Creek, Elder Creek, Elk Grove Creek, Morrison Creek, Chicken Ranch Slough, and Strong Ranch Slough. EPA is approving these TMDLs because they meet the requirements of Clean Water Act Section 303(d) and federal regulations at 40 CFR 130.2 and 130.7.

TMDL Review

EPA reviewed the State submittal package to ensure that all required TMDL elements have been adequately addressed. EPA's review is presented in the checklist below, which determines that all required TMDL elements and an adequate level of technical justification for each element are included.

The TMDLs are designed to implement the existing narrative pesticide and toxicity water quality objectives. EPA finds that the State's conclusion that achieving the selected numeric target values will result in attainment of the water quality objectives and beneficial uses is reasonable.

The submission explains that the TMDLs are to be implemented through existing provisions of the Sacramento County stormwater permit (e.g., develop a pesticide toxicity control plan; monitor diazinon and chlorpyrifos in creeks and rain water; survey pesticide use patterns; and develop a chlorpyrifos and diazinon mitigation plan should the EPA FIFRA actions not provide sufficient control.)

TMDL Checklist

Document name: **TMDL for Sacramento Urban Creeks**
 State: **California**
 Waterbodies: **Arcade Creek, Elder Creek, Elk Grove Creek, Morrison Creek, Chicken Ranch Slough, and Strong Ranch Slough**
 Pollutant(s): **Diazinon and Chlorpyrifos**
 Date of State Submission: **October 14, 2004, received October 20, 2004**
 EPA Reviewer: **Debra Denton**
 TMDL status: **Recommended for Approval**

Review Criteria	Comments
<p>1. Submittal Letter: Letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</p> <p>Cycle (specify info to describe year associated with 303(d) listing of impaired waterbody)</p>	<p>Submittal letter dated October 14, 2004 indicates the Central Valley RWQCB adopted the TMDLs for 6 Sacramento urban creeks.</p> <p>This water body segments were listed on the 2002 Section 303(d) list for diazinon and chlorpyrifos.</p> <p>The submittal contained the TMDL technical report, the Board-approved Resolution, and the responsiveness summary.</p>
<p>2. Water Quality Standards Attainment: TMDL(s) and associated allocations are set at levels adequate to result in attainment of applicable standards.</p>	<p>The water quality objectives that apply to protect the beneficial uses of these urban creeks are the narrative water quality objectives for pesticides and toxicity as described in the Board's Basin Plan. The TMDLs are designed to ensure attainment of these narrative objectives. Specific numeric water quality objectives for diazinon and chlorpyrifos for these creeks have not been established in the Board's Basin Plan. (TMDL pp. 6-7).</p>
<p>3. TMDL endpoint/Numeric Target(s): Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.</p>	<p>The numeric targets are the CDFG criteria for diazinon acute and chronic are 80 and 50 ng/L and for chlorpyrifos acute and chronic 20 and 14 ng/L respectively. In addition to the independent effects of each pesticide, the additive effects are considered. The recommended numeric target is 1.0 for the additive effect of diazinon and chlorpyrifos (see equation 1 of Basin Plan 1998). The CDFG criteria would be the criteria used in equation 1 to calculate additive toxicity. (TMDL pp. 7-8)</p>
<p>4. Source Analysis: Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all sources have been considered.</p>	<p>The TMDL report adequately discusses sources of these pesticides. The most common reported use of diazinon and chlorpyrifos in the county is for urban structural pest control. In addition, agricultural applications within the County. The TMDL report cites the 2000 agreement between the EPA and the registrants and associated phase-out schedule for urban and agricultural uses. (TMDL pp. 22-33)</p>

<p>5. Allocations: Submittal identifies appropriate wasteload allocations for point sources and load allocations for non-point sources. If no point sources are present, wasteload allocations are zero. If no non-point sources are present, load allocations are zero.</p>	<p>The TMDLs set both wasteload and load allocations. The wasteload and load allocations for sources containing both pesticides are set at one toxic unit to reflect the additive toxicity of these pesticides.</p> <p>EPA concludes these TMDLs include wasteload and load allocations that are consistent with the provisions of CWA and federal regulations.</p>
<p>6. Link Between Numeric Target(s) and Pollutant(s) of Concern: This submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</p>	<p>TMDL report and resolution adequately describes the relationship between the numeric target, pollutant sources and TMDL allocations. The report adequately describes the pathways of the pesticides into the urban creeks both through runoff and atmospheric transport. (TMDL pp. 33-40).</p>
<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>The TMDL analysis provides an implicit margin of safety to account for uncertainty in the numeric targets and the linkage analysis. Equating the allocations to the numeric targets provides an implicit margin of safety, since the primary sources of diazinon and chlorpyrifos must be at or below the receiving water targets. The approach of setting targets based on additive toxicity provides an additional margin of safety to account for additive effects of exposures to both pesticides. (TMDL pp. 45)</p>
<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>TMDL analysis explains that the allocations apply throughout the year and therefore ensure attainment of applicable water quality standards under all flow conditions. By setting the targets on a concentration basis, the TMDLs ensure that the standards will be met under all flow conditions.</p>
<p>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p>The Regional Board held a staff workshop in May 2004, and a Regional Board meeting to adopt the Resolution. The Regional Board adequately responded to written and oral comments from the public. These comments and the responses were provided to EPA.</p> <p>After we received the TMDL submission, counsel for the two pesticide registrants asked EPA to disapprove the TMDLs based on alleged concerns about the diazinon criteria calculations upon which the State relied, in part, to develop the TMDLs. The Sacramento urban creeks TMDL submission did not include a water quality standards change that required EPA review or action, and is instead based on the State's interpretation of its narrative water quality standards applicable to the Sacramento urban creeks. The State has substantial discretion to interpret its narrative water quality standards, including the discretion to set numeric targets more stringent than necessary to attain the narrative water quality standards (although the record supporting the</p>

	<p>TMDLs does not indicate that the numeric targets selected in this case are more stringent than necessary). Neither the TMDL submission nor the material provided by the requestor provided a basis for EPA to disapprove the TMDLs based on the State's interpretation of its standards.</p> <p>In any event, even if EPA did consider the technical concerns raised by the requestor, it is not clear that the objective or associated TMDL numeric targets would be relaxed. The requestor did not provide all the data and information in existence regarding diazinon effects in the aquatic environment. Any review of the objectives should consider all available data and information.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides an acceptable review and summary of available information about diazinon and chlorpyrifos in the watershed and a sufficiently clear discussion of analytical methods used to calculate the TMDLs.</p>